King County
Department of Natural Resources and Parks
Water and Land Resources Division
Noxious Weed Control Program
206-296-0290 TTY Relay: 711

BEST MANAGEMENT PRACTICES
Hawkweeds - *Hieracium* spp.
Asteraceae

Class A, B and C Noxious Weeds

Description

- Hawkweeds hybridize freely with native and non-native species, and are very difficult to identify to species.
- Perennials in the sunflower family with milky juice, yellow or orange flower heads and bristly-hairy overall.
- Rosettes of lance-shaped leaves at the base of the stem. Leaves usually persist through flowering.
- Most have stolons (runners) allowing for aggressive vegetative reproduction.
- Native species do not have stolons. Some non-native species do not have stolons either.

- **Orange hawkweed** (*H. aurantiacum*) is usually 12 inches tall, with deep red-orange, notch-tipped ray flowers. Flowers begin to open in May or June and plants produce from 12 to 30 seeds/flower and send out four to eight stolons each season. Has been reported to be allelopathic (inhibits other plants by producing toxic chemicals in the surrounding soil).
- There are several species of **yellow hawkweeds** (*H. atratum*, *H. laevigatum*, *H. caespitosum*) with yellow flowers and variable leaf types and arrangements. These are the most difficult to distinguish to species. Yellow hawkweed has clusters of flowers near the tops of the stems, stolons and no leaves on the stem. Smooth and polar hawkweeds have more branched flower clusters, toothed leaves, a few leaves along the stem and no stolons.
- **Mouseear hawkweed** (*H. pilosella*) is a low-growing hawkweed from 3 to 10 inches tall, commonly found in colonies of rosettes connected by stolons. All leaves either form a basal rosette, or grow as single leaves along the stolons. Each rosette produces only one yellow flower head on a single slender stem. Blooms in May and June.
- **Yellow devil hawkweed** (*H. floribundum*) has stems usually 12 – 24 inches tall. Flowers are yellow to whitish yellow and cluster at the top. Ray petals are square-tipped from ½ to 1 inch long and bloom from June to August.

Habitat

- Prefer full sun or partial shade and soil that is well-drained, coarse-textured and moderately low in organic matter.
- Mostly found on roadsides, in fields and pastures and in disturbed areas.
- Hawkweeds tolerate some shade and can grow in forest openings and cleared areas.
- Orange hawkweed often grows near garden areas where it escapes from intentional plantings as part of a “wildflower meadow mix”. It is also found at the Snoqualmie Pass area.

Reproduction

- Perennials that reproduce by seed. Many also spread out vegetatively through stolons.
- **Flowering typically starts in late May or early June**. Usually some plants go to seed starting in July but plants continue to flower and go to seed through September.
- If stems are mowed, they will send up a shorter stem and flower again soon after being cut.

Control Methods

The preferred method of control is Integrated Pest Management (IPM). IPM involves selecting from a range of possible control methods to match the management requirements of each specific site. The goal is to maximize effective control and to minimize negative environmental, economic and social impacts.

Control methods should be multifaceted and adaptive, developed to reflect the available time, funding, and labor of the participants, the land use goals, and the values of the community and landowners. Management will require dedication over a number of years, and should allow for flexibility in method as appropriate.

Management Plan

- Eradicate small infestations by digging up roots or by spot-treatment with the appropriate herbicide, followed by re-seeding with grass where possible.
- For larger infestations, combine the application of a selective herbicide in the spring with methods that will encourage the growth of competitive grasses such as seeding, fertilizing and good grazing practices. The infested area should then be monitored in June and July for any flowering plants that were missed by the herbicide. All remaining flower heads should be bagged and removed before seeds mature in late July or August.
- If a non-selective herbicide (such as glyphosate) is used, it should be combined with an effective re-vegetation of the site. If the site is not re-vegetated, hawkweed seedlings from the existing seed bank will quickly re-infest the area.
- For several years following treatment, monitor areas for new plants from the seed bank.

Early Detection and Prevention

- Difficult to spot in tall grass unless it is in flower. Survey pasture areas, unmanaged grasslands and roadsides for flowering and pre-flowering plants from **mid May to late June**.
- Isolated small populations can be dug up but the site should be monitored for several years for plants growing from root fragments and from the seed bank.
- Prevent plants from spreading from existing populations by cleaning vehicles, boots and animals that have been in infested areas. Seeds are small and are easily carried in mud.
- To prevent new infestations: monitor for hawkweed, avoid over-grazing, maintain proper turf or ornamental management (irrigation, fertilization, mowing) or increase shade by planting shrubs and trees.

Manual

- Hawkweeds with stolons will re-sprout from any fragments left in the soil so carefully remove all roots.

- **Dig up plants in the spring or early summer** when the soil is still moist and before the seeds mature. The roots are fibrous and relatively easy to dig up but break easily. It is important to remove as much root as possible.
- If the plants are in flower, **cut off and bag all flower heads** because they can form viable seeds after they are cut or dug up. If there are already seeds, bag and cut off the seed heads before digging up the rest of the plant. It is very difficult to pull the plants without dispersing the small, lightweight seeds. Brush off boots and clothes before leaving the infested area.
- Areas where mature plants are dug up may become infested with new seedlings unless they are carefully monitored and planted with grass or other competitive vegetation. Infested areas typically have many seedlings and an extensive seed bank.

Mechanical

- Mowing will not control hawkweeds because they are perennials and most reproduce by stolons as well as seed.
- Mowed plants respond by sending up shorter stems and quickly flowering again. Also mowed plants put more energy into spreading by stolons and the infestation size and density increases.
- A single plowing may increase hawkweed cover, but on productive agricultural sites, an intensive management program that combines cultivation and annual crops will effectively control hawkweed.

Biological

- There are no biological controls currently available for hawkweeds.

Chemical

- Chemical control options may differ for private, commercial and government agency users. Follow all label directions. Herbicides should only be applied at the rates and for the site conditions / land usage specified on the label.
- **Certain herbicides can not be used in aquatic areas or their buffers**. If herbicides are used, make sure that their use is allowed at your site. Contact your local noxious weed control program for control guidelines in your area.
- Several herbicides are recommended by the PNW Weed Control Handbook for hawkweed control. For site specific herbicide recommendations, please contact the King County Noxious Weed Control Program.
- The addition of a suitable surfactant to the herbicide may improve the control results.
- Non-selective herbicides are effective but may damage grass and other vegetation. Treatment with a non-selective herbicide needs to be followed by re-seeding with grass. Without re-seeding, bare areas will be re-infested from the seed bank and by any missed plants.
- Selective herbicides that target only broadleaf plants may be used in grassy areas. Treatment with selective herbicides is most effective in the spring and early summer. Applications that are later than the ideal time will be less effective but the staggered flowering period means that herbicide applications can be partly effective throughout the flowering season. Flowering plants may go to seed immediately when sprayed.

Additional Information

Legal Status in King County: **The King County Noxious Weed Control Board requires property owners to control hawkweed on private and public lands throughout the county.**

Local Distribution

There are hawkweed infestations scattered throughout King County. The largest known infestation of yellow hawkweed is at the Tolt Reservoir east of Carnation. There are also hawkweed sites on I-90, U.S. Highway 2, and State Highways SR-410, SR-18, SR169, SR-202 and SR-203. There are sites east of Redmond, east of Woodinville, in Covington and Kent and in the Edgewick areas. Most of the infestations are on roadsides with a few on nearby residential or vacant properties.

Orange hawkweed is also scattered throughout the county but is more common in urban areas due to its use as an ornamental. There are a large number of sites in the Skykomish area where it has escaped from ornamental plantings into many residential yards and roadside areas. There are also infestations in Seattle, Burien, Renton, Woodinville, Bellevue, Black Diamond, Maple Valley, Redmond area, North Bend, Enumclaw and Federal Way.

Impacts and History

- When the hawkweeds form monocultures by establishing a dense mat of plants, they lower biodiversity and reduce the forage value of grasslands for grazing animals.
- As a result of prolific seed and stolon production each season, hawkweeds have become successful competitors crowding out native, ornamental, pasture and crop species.
- Hawkweeds were introduced to the United States from Europe as herbal remedies and ornamentals. Mouseear hawkweed was introduced in Michigan in 1861, orange hawkweed was introduced before 1818 as an ornamental and the other hawkweeds were introduced around 1879. Hawkweeds were reported in Washington by 1969.

References

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King County Noxious Weed Control Program
Department of Natural Resources and Parks
Water and Land Resources Division
201 S. Jackson St., Suite 600
Seattle WA 98104
(206) 296-0290
e-mail: noxious.weeds@metrokc.gov
http://dnr.metrokc.gov/weeds